

**WHAT IS CLAIMED IS:**

1. A transceiver for dual-mode radio communications, comprising:  
means for establishing a bi-directional link (408) for exchanging control  
5 information; and  
a high data rate (high-rate) transmitter (506) coupled with a uni-directional  
link for transmitting user information if the transceiver (500) is primarily a  
transmitter of user information; or  
a high data rate receiver (556) coupled with the uni-directional link for  
10 receiving user information if the transceiver (500) is primarily a receiver of user  
information.
2. The transceiver of claim 1, further comprising:  
a return channel utilizing a low-data rate (low-rate) interface for supporting  
15 the user information transmissions over the high-rate link.
3. The transceiver of claim 1, further comprising:  
means for carrying data link control and media access layer on a high-rate  
physical channel in one direction; and  
20 means for carrying the data link control and media access layer in the  
reverse direction on a conventional physical channel.
4. The transceiver of claim 1, wherein the dual mode transceiver comprising a  
high-rate transmitter further comprises:  
25 a basic receiver section (502);  
a basic transmitter section (504); and  
a high-rate transmitter section (506).
5. The transceiver of claim 1, wherein the dual mode transceiver comprising a  
30 high-rate receiver further comprises:  
a basic receiver section (554);  
a basic transmitter section (552); and

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a high-rate receiver section (556).

6. The transceiver of claim 2, further comprising:

means for splitting forward and return transmissions at Data Link Control  
5 (DLC) layer wherein the high-rate section of the transceiver is operable on one  
Media Access Control (MAC) layer and the low-rate section is operable on a  
second MAC layer.

7. The transceiver of claim 2, further comprising:

10 means for splitting forward and return transmissions at the MAC layer  
wherein the high-rate section of the transceiver is operable on one physical (PHY)  
layer and the low-rate section is operable on a second PHY layer.

8. The transceiver of claim 7, wherein the transceiver informs other users on  
15 the high-rate channel that the transceiver will respond on the low-rate channel to  
high-rate transmission.

9. A method of asymmetric communications via a transceiver, comprising:  
exchanging control information over a bi-directional link;

20 transmitting user information utilizing a high-rate transmitter via a uni-  
directional link if the transceiver is primarily a transmitter of user information; and  
receiving the user information utilizing a high-rate receiver via the uni-  
directional link if the transceiver is primarily a receiver of the user information.

25 10. The method of claim 9, further comprising:

supporting the user information transmissions over the high-rate link with a  
return channel utilizing a low-data rate (low-rate) interface.

11. The method of claim 9, further comprising:

30 carrying data link control and media access layer on the high-rate physical  
channel in one direction, wherein the conventional physical channel carries the  
data link control and media access layer in the reverse direction.

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12. The method of claim 9, wherein the dual mode transceiver comprising a high-rate transmitter further comprises:

- 5 receiving narrowband transmissions in a basic receiver section;  
transmitting narrowband transmissions in a basic transmitter section; and  
transmitting wideband transmissions in a high-rate transmitter section.

13. The method of claim 9, wherein the dual mode transceiver comprising a high-rate receiver further comprises:

- 10 receiving narrowband transmissions in a basic receiver section;  
transmitting narrowband transmissions in a basic transmitter section; and  
receiving wideband transmissions in a high-rate receiver section.

14. The method of claim 10, further comprising

- 15 splitting forward and return transmissions at Data Link Control (DLC) layer  
wherein the high-rate section of the transceiver is operable on one Media Access  
Control (MAC) layer and the low-rate section is operable on a second MAC layer.

15. The method of claim 10, further comprising

- 20 splitting forward and return transmissions at the MAC layer wherein the  
high-rate section of the transceiver is operable on one physical (PHY) layer and  
the low-rate section is operable on a second PHY layer.

16. The method of claim 15, further comprising

- 25 informing other users on the high-rate channel that the transceiver will  
respond on the low-rate channel to high-rate transmission.